

THE AGE-STRUCTURE OF OUR POPULATION

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IN the pamphlet entitled *Matters of Life and Death*, issued by the Registrar-General and published by H.M. Stationery Office in May 1948, there will be found, packed into a small space, much useful information about the population of England and Wales. Towards the end of the pamphlet there is a valuable table giving the populations by five-year age-groups at six different periods, beginning with 1841 and ending with 1947. The figures refer to the totals of both males and females for each group, but the Registrar-General has kindly given me the separate figures for the two sexes for the year 1947, and these figures will be found in the attached table.

The pamphlet shows in graphical form the percentages (of the whole population) of children from 0 to 15, males and females separately from 15 to 45, and from 45 to 65, and persons 65 and over. If we take the working population, men and women, between 15 and 65, it appears that in 1841 this group accounted for 59.4 per cent of the whole; in 1901 it accounted for 62.9 per cent; and in 1947 for 68.3 per cent. But the most striking feature of the diagrams is the diminution of the percentage of children—36.1, 32.4 and 21.2, accompanied by a large increase in the number of persons 65 years old and over.

But, as we all know, the diminution in the proportion of children has been offset by the fact that they live longer. "For example, boys born in 1841 could, on average, expect to survive to the age of 40 and girls to 42; by 1901 these average expectations had increased to 48 and 52, and by 1931 to nearly 59 and 63." If we were to take the percentages of the whole population of the group 20 to 60, we should find the following: in 1841, 46.7; in 1901, 50.1; and in 1947, 56.7. In the latter year, taking the males and females separately, we get the figures 57.0 for the males and 56.4 for the females.

Recently it has been customary to show the age-structure of a population graphically, by means of an "age-pyramid," in which each group, included in a five- or ten-year period, is represented by a "step" of appropriate length. Attached will be found such a "pyramid," which is a graphic representation of the facts provided by the Registrar-General for 1947. The total number of males is given as 20,917 thousands, and the total number of females as 22,353 thousands. There are thus 1.436 millions more women than men.

A glance at the pyramid will show some significant facts. There is, so to speak, a "bite" in the outline between the ages of 5 and 35, which will, of course, continue to show itself in successive years, a bite due to past diminished birth rates. But there is also a really remarkable increase in the group 0 to 5, that is, of those born between mid-1942 and mid-1947. The boys number 1,813 thousands and the girls 1,723 thousands.

By making use of an appropriate life-table we can calculate the probable number of survivors of any five-year group after a definite number of years. The present writer has thought that it might be instructive to make such a calculation for the population of England and Wales, by five-year groups, the figures for males and females being treated separately. The period chosen was the ten years from mid-1947, to enable us to see the shape of the pyramid for 1957. But there is one qualification: we do not know what the birth rates will be during that ten years, and it is wisest to avoid any speculation on this point. In consequence, the shape of the 1957 pyramid will not be drawn for the early ages 0 to 10 years. After ten years it has a considerable degree of reliability, apart from changes which may be due to migration or to war.

If the two sets of figures or the two pyramids, namely those for 1947 and 1957,

are compared or plotted together, some interesting facts appear. As regards the totals of the population of persons ten years old and older, the male total goes up by 235 thousand, and the female total comes down by 170 thousand, so that we shall not go far wrong if we say that the total number of persons ten years old and over will be much the same in 1957 as in 1947.

The males 15 to 45 will be diminished in number by no fewer than 855 thousand, but the males 45 to 65 will increase in number by 586 thousand. Much the same with the females of those ages; the 15 to 45 group will come down by 961 thousand, whilst the 45 to 65 group will go up by 298 thousand. The over-sixty-fives of both sexes show an

increase of nearly a third of a million. But the children between the ages of 10 and 15 will increase in number by 353 thousand boys and 316 thousand girls.

Such calculations, and the diagrams based upon them, take no account of migration, inward or outward, or of the effect on our numbers of future wars. But, as to migration and future population tendencies, no doubt, when the Royal Commission on Population publishes its report, we shall be able to study elaborate and far-reaching investigations. Meanwhile, it is hoped that this present paper may serve to throw some light on the alterations in our age-structure which are likely to take place during the next few years.

ENGLAND AND WALES
POPULATION BY SEX AND AGE 1947 AND 1957

Age last birthday	Male			Female		
	Thousands Year 1947	Thousands Year 1957		Thousands Year 1947	Thousands Year 1957	
0	1,813			1,723		
5	1,450			1,397		
10	1,404	1,757	+353	1,364	1,680	+316
15	1,463	1,422	— 41	1,441	1,376	— 65
20	1,533	1,376	—157	1,541	1,336	—205
25	1,613	1,416	—197	1,645	1,400	—245
30	1,632	1,475	—157	1,656	1,488	—168
35	1,719	1,540	—179	1,744	1,580	—164
40	1,663	1,539	—124	1,692	1,578	—114
45	1,459	1,588	+129	1,560	1,640	+ 80
50	1,205	1,492	+287	1,437	1,559	+122
55	1,104	1,252	+148	1,320	1,389	+ 69
60	945	967	+ 22	1,185	1,212	+ 27
65	788	800	+ 12	1,019	1,021	+ 2
70	573	588	+ 15	756	799	+ 43
75	345	389	+ 44	489	554	+ 65
80	146	200	+ 54	255	296	+ 41
85 and over	62	88	+ 26	129	155	+ 26
Total over 10	17,654	17,889		19,233	19,063	

The figures for 1947 were kindly supplied by the Registrar-General. The figures for 1957 are calculated from life-table data.

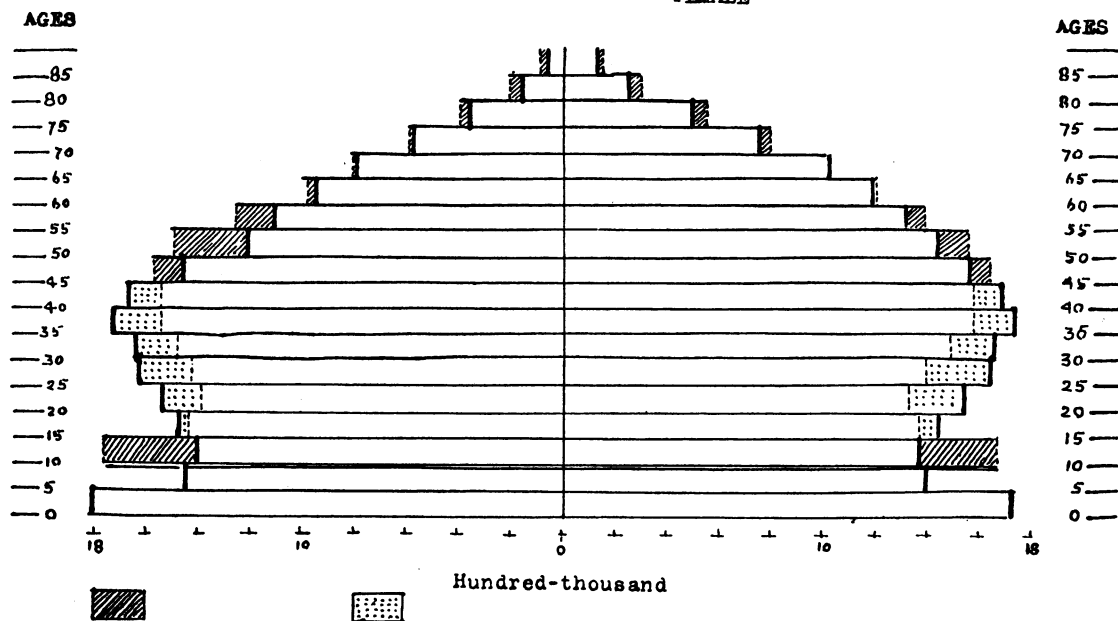
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AGE PYRAMIDS

For 1947 & 1957

MALE

FEMALE



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